

Cited Reference 3

Japanese Patent Laid-Open (Kokai) No. 77629/1997 (or JP 9-77629 A)

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Applicant: Mandamu Co., Ltd.

Title of Invention: Post-Application Foaming Gel Composition

Disclosure A: (Column 1, lines 1 to 4)

"[Claims]

[Claim 1] A post-application foaming gel composition which comprises as essential components 0.01 to 5% by weight of a gelling agent, 0.05 to 5% by weight of alkylglycoside, and 0.1 to 10% by weight of a post-application foaming agent."

Disclosure B: (Column 2, lines 21 to 35)

"As the gelling agents used in the resent invention there may are used all of the components capable of gelling a cosmetic composition. For example, there may be used a synthetic component such as carboxyvinyl polymer, sodium polyacrylate, polyethylene glycol or the like, a semi-synthetic component such as methyl cellulose, ethyl cellulose, . . . propylene glycol alginate or the like, a natural component such as locust bean gum, carrageenin, galactan . . . gelatin, casein, albumin, collagen or the like."

Disclosure C: (Column 2, lines 41 to 45)

"As the post-application foaming agents used in the resent invention, there may are used all of the components capable of foaming a gelling composition under atmospheric pressure. Typically, there may be used propane, butane, n-pentane, isopentane, hexane or the like."

Disclosure D: (Column 3, lines 18 to 27)

"As example of alkyl groups of alkylglycoside used in the present invention, there may be listed ethyl group, propyl group, butyl group, pentyl group . . . hexadecyl group, octadecyl group, eicosyl group, coconut oil alkyl group (the number of carbons 8 to 20) or the like."

Disclosure E: (Column 4, line 32 to column 6, line 12)

"[Example] The invention of this application is further in detail exemplified by Examples relating to the present invention, but is not restricted to the matters described in said Examples. Unless otherwise instructed, the mixing amounts used in Examples are expressed by percent by weight.

**Example 1 and Comparative 1·1, 1·2**

A hair set agents in Example 1 and Comparative 1·1, 1·2 shown in the following Table 1 were prepared.

**[Table 1]**

	Example 1	Compare Example 1·1	Compare Example 1·2
99% vitrex denatured ethanol	5.0	5.0	5.0
Ion exchange water	84.4	85.4	77.4
Dodecyl glycoside	1.0	-	8.0
Polyoxyethylene octyl phenyl ether (10 E.O.)	0.5	0.5	0.5
Polyvinyl pyrrolidone	3.0	3.0	3.0
Hydrolyzed keratin liquid	0.1	0.1	0.1
Carboxyvinyl polymer	0.5	0.5	0.5
Triethanolamine	5.0	5.0	5.0
Isopentane			
Total	100.0	100.0	100.0"

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## PATENT ABSTRACTS OF JAPAN

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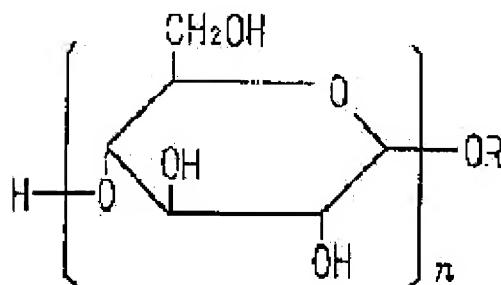
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#### (54) DELAYED FOAMING GEL COMPOSITION

(57) Abstract:

**PROBLEM TO BE SOLVED:** To obtain a delayed foaming gel composition exhibiting a foam eliminating effect while keeping a delayed foaming property by adding a specific amount of an alkylglycoside into a system blended with a gelling agent and a delayed foaming agent by each specific amount.

**SOLUTION:** This delayed foaming gel composition is obtained by blending 0.05-5wt.% alkylglycoside to a system containing 0.01-5wt.% gelling agent and 0.1-10wt.% delayed foaming agent. By applying a shearing stress to the composition in the atmosphere, a foam formed by the shearing stress can be applied directly to the hair or skin, and the foam disappears soon during a hair styling or a spreading over the skin. The composition can be applied as a cosmetic water, a hair treatment agent, a hair setting agent, a hair dyestuff, a permanent wave agent, cleaning agent, *polymer*, a methylcellulose, a guar gum, etc., are



used. As the delayed foaming agent, propane, butane, etc., are used. As the alkylglycoside, a compound of the formula [R is a 2-20C alkyl; (n) is 1-5] (e.g.; dodecylglycoside) is preferable.

## CLAIMS

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[Claim(s)]

[Claim 1]A gelling agent 0.01 to 5 % of the weight, alkyl glycoside A post expansion nature gel composition which uses 0.05 to 5 % of the weight, and post expansion agent 0.1-10 % of the weight as an essential ingredient.

## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to a post expansion nature gel composition, and that purpose is involved in post expansion nature gel compositions in which a defoaming effect is also acquired desirably, such as face toilet, a hair treatment agent, a hair set agent, hair dye, a permanent wave agent, and a cleaning agent, maintaining post expansion performance.

[0002]

[Description of the Prior Art]Generally, a post expansion nature gel composition is the gel state when it breathes out under atmospheric pressure, and after [ this regurgitation ] fixed time says the cosmetics constituent to which it will foam if the gel state is maintained and shearing stress is applied. Gel is formed with soap like the shaving foam indicated by JP,49-34912,B or cleansing cream form as such a post expansion nature gel composition, and the post expansion nature gel composition which solubilizes and distributed the post expansion agent in gel easily by that cause exists. The post expansion nature gel composition in which HLB solubilizes and distributed the post expansion agent using ten or more nonionic surfactants as a type with which a post expansion nature gel presentation does not use soap for JP,3-31389,A as other examples exists. The post expansion nature gel compositions of said JP,49-34912,B indication are independent or the mixture chosen from saturated aliphatic hydrocarbon and halogenated hydrocarbon as not less than 40% of water, soap, a water-soluble gelling auxiliary agent, and a post expansion agent, and a post expansion [ \*\* and others ] nature gel composition. The post expansion nature gel composition of the after-mentioned JP,3-31389,A indication is a post expansion nature gel composition which consists of water, a gelling agent, a surface-active agent, a post expansion agent, and alcohols added if needed.

[0003]

[Problem(s) to be Solved by the Invention]However, the post expansion nature gel composition of these former had a fault, respectively. First, will maintain the gel state, if said post expansion nature gel composition takes out a constituent in the palm and it is

neglected as it is, if gel is ground against a finger, will foam, but. The fizz gel composition had after this the fault that a bubble did not disappear forever since a soap component is included, and goods, such as a treatment agent, had the fault of being unsuitable.

[0004]On the other hand, will maintain the gel state, if the after-mentioned post expansion nature gel composition takes out a constituent in the palm and it is neglected as it is, if gel is ground against a finger, will foam, but. For carrying out defoaming, must grind a bubble against a finger continuously further, namely, if shearing stress is applied at the time of use, will foam to the after-mentioned post expansion nature gel composition, but. If it does not apply to hair or the skin after fully applying shearing stress when using it since defoaming is not carried out unless it furthermore continues applying shearing stress, there is a fault of remaining without a bubble disappearing. Therefore, although it is used for the conventional post expansion nature gel composition, maintaining the gel state at the time of extraction, and making it foam just before use, it has each fault of being hard to carry out defoaming even after using it for hair or the skin. [0005]. Then, demonstrate a defoaming effect, this invention persons maintaining post expansion performance by carrying out specific amount combination of the alkyl glycoside, as a result of repeating research wholeheartedly. That is, shearing stress is applied to the gel composition under the atmosphere, if the bubble made by this shearing stress is immediately applied to hair or the skin, while lengthening on a style or the skin, the knowledge of carrying out defoaming immediately is carried out, and it came to complete this invention.

[0006]

[Means for Solving the Problem]It is made in order to solve an aforementioned problem, and this invention is a gelling agent. 0.01-5 Weight %, alkyl glycoside 0.05 to 5 % of the weight, post expansion agent A post expansion nature gel composition which uses 0.1 to 10 % of the weight as an essential ingredient is started.

[0007]

[Embodiment of the Invention]Hereafter, the embodiment of the post expansion nature gel composition concerning this invention is described. If the gelling agent used by this invention is an ingredient which can gel a cosmetics constituent, often altogether for example, Composite components, such as a carboxyvinyl polymer, sodium polyacrylate, and a polyethylene glycol, Methyl cellulose, ethyl cellulose, hydroxyethyl cellulose, Hydroxypropylcellulose, hydroxypropylmethylcellulose, Semisynthesis ingredients, such as carboxymethyl cellulose, soluble starch, and propylene glycol alginate, Guar gum, locust bean gum, KUINSU seed, Carrageenan, Although natural components, such as galactan, gum arabic, tragacanth, pectin, mannan, starch, xanthan gum, dextrin, SAKUSHINO glucan, curdlan, gelatin, casein, albumin, and collagen, are mentioned, it is not limited to these. In the post expansion nature gel composition concerning this invention, it is such a gelling agent. 0.01-5 It is desirable to do weight % combination of. The reason and 0.01 It is because there is displeasure at the time of use according to the smeariness of a gelling agent, and it is not desirable also when it is any if gel sufficient by less than weight % is not obtained but it blends exceeding 5 weight % conversely.

[0008]If it is an ingredient for which a gel composition is made to foam under atmospheric pressure as a post expansion agent used by this invention, it is altogether good, and if that example is illustrated, aliphatic hydrocarbon, such as propane, butane, n-

pentane, isopentane, and hexane, wood ether, etc. can be illustrated. In the post expansion nature gel composition concerning this invention, it is such a post expansion agent. It is desirable to blend 0.1 to 10% of the weight. It is because it foams promptly under atmospheric pressure and good post expansion performance is not obtained, and it is not desirable also when it is any after all if the reason and post expansion performance sufficient at less than 0.1 % of the weight are not obtained but it blends exceeding 10 % of the weight conversely.

[0009]In the post expansion nature gel composition concerning this invention, alkyl glycoside is blended 0.5 to 2% of the weight preferably 0.05 to 5% of the weight. Alkyl glycoside is what carries out the duty which makes the effect which can carry out defoaming during use while maintaining the post expansion performance of the gel composition of post expansion nature reveal, At less than 0.05 % of the weight, this effect is not acquired enough, but it is 5. If it blends exceeding weight %, a defoaming effect is demonstrated too much and post expansion performance of a gel composition cannot be demonstrated, Result 0.05-5 The range of weight % maintaining post expansion performance, a defoaming effect can also be revealed and it is 0.5 to 2% of the weight of a range desirable still more desirably. In the post expansion nature gel composition concerning this invention, the compound expressed with the following structural formula (formula 1) as an example of this alkyl glycoside can use it conveniently.

[\*\* type 1] the straight chain which is expressed with the carbon numbers 2-20 in the inside R of the formula 1, or a branched-chain alkyl group. n shows the integer of 1-5. As an example of the alkyl group of the alkyl glycoside used in this invention, An ethyl group, a propyl group, a butyl group, an isobutyl group, a pentyl group, 3-methylbutyl group, A hexyl group, a methylpentyl group, a heptyl group, 4-methylhexyl group, 5-methylhexyl group, 4-ethylpentyl group, an octyl group, 6-methyl heptyl group, 5-methyl heptyl group, a 5,5-dimethyl hexyl group, the dodecyl, a tetradecyl group, a hexadecyl group, an octadecyl group, an eicosyl group, and palm oil alkyl group (carbon number 8-20) etc. -- although it can mention, it is not limited to these.

[0010]What is necessary is just to blend necessary ingredients, such as alcohols, a surface-active agent, and perfume, in the post expansion nature gel composition concerning this invention if needed. As an example of alcohols, monohydric alcohol, such as ethyl alcohol and isopropyl alcohol, can be mentioned.

[0011]Although the usual surface-active agent can be used as a surface-active agent used by this invention, It is desirable for acquiring a defoaming effect, a nonionic surfactant maintaining post expansion performance even especially in inside, As the example, a sorbitan fatty acid ester, a glycerine fatty acid ester, Polyglyceryl fatty acid ester, propylene glycol fatty acid ester, Polyoxyethylene sorbitan fatty acid ester, polyoxyethylene sorbitol fatty acid ester, Polyoxyethylene glycerine fatty acid ester, polyethylene glycol fatty acid ester, Polyoxyethylene alkyl ether, a polyoxyethylene phytosterol, Polyoxyethylene polyoxypropylene alkyl ether, polyoxyethylene alkyl phenyl ether, Polyoxyethylene castor oil, hydrogenated castor oil, a polyoxyethylene yellow-bees-wax derivative, a polyoxyethylene lanolin derivative, polyoxyethylene alkylamine amide, and homogeneous-polyoxyethylene-alkyl-ether \*\*\* can be mentioned. Alkyl sulfate, polyoxyethylene-alkyl-ether sulfate, N-acylamino sulfate, a sodium N-acyl methyl taurate salt, polyoxyethylene-alkyl-ether acetate, Alkyl sulfosuccinate, an alkyl-sulfonic-acid salt, acyl collagen peptide, Anionic detergents,

such as an alkyl-phosphoric-acid salt and a polyoxyethylene-alkyl-ether phosphate, can be mentioned. In addition, alkyl chloride trimethylammonium, chloridation distearyldimethylbenzylammonium, Cationic surfactants, such as stearyldimethylbenzylammonium chloride, can be mentioned, and also ampholytic surface active agents, such as a chloride alkyl diaminoethylene glycine and a palm oil alkyl betaine, can also be mentioned.

[0012] If it is a range which does not spoil that stability of a system to a post expansion nature gel composition of this invention, besides the above-mentioned essential ingredient Oily matter, It is also possible to blend suitably polyhydric alcohol, a gum substance, an antiseptic, a chelating agent, an antioxidant, an ultraviolet ray absorbent, coloring matter, perfume, etc., and it is altogether good if an aerosol type, pump types, etc. are arbitrary gel compositions as types of products.

[0013]

[Example] The example which starts this invention below explains this invention still in detail. This invention is not limited to these examples. The loadings shown in the example are weight % especially when unstated.

The hair set agent of Example 1 and the comparative example 1-1, Example 1 of the presentation shown in the one to secondary table 1 and the comparative example 1-1 thru/or the comparative example 1-2 was prepared.

[Table 1]

The hair treatment agent of Examples 2 and 3 of a presentation and the comparative example 2 shown in Table 2 of Example 2 and secondary 3 comparative example was prepared.

[Table 2]

The face toilet of Examples 4 and 5 of the presentation shown in Table 3 of Example 4 and 3rd 5 comparative example and the comparative example 3 was prepared.

[Table 3]

[0014]evaluation -- it examined about the fizz of a post expansion nature gel composition and antifoam which did the next examination and were obtained by Examples 1-5 and the comparative example 1-1-3.

\*\*\*\*\* [ that a gel composition becomes make the test-method above-mentioned example and a comparative example actually use it for ten panels, and applies a shearing reaction at a bubble ] (fizz) -- mark attachment of whether the bubble disappears immediately was carried out (antifoam), and it evaluated, in addition -- computing an average about each item -- 4.5 -- the above -- 0 and 4 -- the above -- 4.5 -- the following -- 0 and 3 -- the above -- 4 -- the following -- \*\* and 1 -- the above -- 3 -- the following was made into x. This result is summarized in Table 4 and indicated.

gel is taken in the <valuation-basis> fizz palm, and it is a bubble in the palm about the gel -- it shines.

five point: -- three which become bubble within 10 seconds point: -- one which becomes bubble within 30 seconds point:, although defoaming is carried out within 10 seconds after three point:spreading which carries out defoaming within 10 seconds after five point:spreading which applies to hair or skin the bubble rubbed and made in 30 seconds by the antifoaming hand which does not become a bubble, and gets used to hair or skin well, One point which adapts itself to neither hair nor skin: Even if 30 second passes after spreading, don't carry out defoaming. [0015]

[Effect of the Invention]At this invention, it is a gelling agent. 0.01 to 5 % of the weight, alkyl glycoside 0.05-5 Weight %, post expansion agent Since the post expansion nature gel composition which uses 0.1 to 10 % of the weight as an essential ingredient is started,

alkyl glycoside is blended.

Therefore, if a defoaming effect is demonstrated, maintaining post expansion performance, i.e., the bubble which applied shearing stress to the gel composition under the atmosphere, and was made by this shearing stress is immediately applied to hair or the skin, While lengthening on a style or the skin, the effect used as the post expansion nature gel composition of the aerosol type which carries out defoaming immediately is done so.

[Formula 1]

[Table 4]

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[Translation done.]